REMARKS

Support for claims 12, 16 and 17 can be found throughout the specification, e.g., Page 4, lines 14-25; Page 34.

Rejection under §112, first paragraph

The claims have been amended to recite hybridization conditions. This format has been stated by the Patent Office to conform to the requirements of §112, first paragraph. The recited hybridization conditions yield structurally similar sequences. See, *Synopsis of Written Description Guidelines*, Example 9; *Enzo Biochem. Inc. v. Gen-Probe Inc.*, 63 USPQ2d 1609 (Fed. Cir. 2002).

Rejection under §101

Applicant respectfully traverses this rejection. According to M.P.E.P. §2107.02: "As a matter of Patent Office practice, a specification which contains a disclosure of utility which corresponds in scope to the subject matter sought to be patented must be taken as sufficient to satisfy the utility requirement of §101 for the entire claimed subject matter unless there is a reason for one skilled in the art to question the objective truth of the statement of utility or its scope."

It is alleged on Page 7 of the Office action that "applicants have not shown ... that there is a disease or disorder correlated with protein of the invention." To the contrary, the examples in the specification clearly show that ANIC-BP-1B is up-regulated in an animal model for traumatic brain injury (lateral fluid percussion). For instance, on Page 31 of the specification it is stated: "Upregulation of protein in cerebellum of traumatized brains was confirmed by RT-PCR." Example 4 (Page 32) describes differential display and PCR methods that were utilized to show

that expression of ANIC-BP-1B was increased after head trauma. Thus, ANIC-BP-IB can be used as a marker for traumatic brain injury.

The traumatic brain injury model using lateral percussion model is an established model for human head injury. For example, a Medline search for "lateral fluid percussion" showed 129 references, and a search for traumatic brain injury model lateral fluid" uncovered 37 references. See Exhibit A. Hicks et al. (Abstract only) expressly state that the lateral fluid percussion is a commonly used rat model for human head injury. Allen et al. utilize an in vivo lateral percussion model to induce head injury in rats (Page 114, first column), and conclude that their results applicable to clinical (i.e., human) head injury management. See, e.g., Allen et al., Abstract; Page 119, second column. Similarly, Saatman et al. state that therapeutic efficacy of a calpain inhibitor in treating a rat model for traumatic brain injury (fluid percussion model as described in Saatman et al., Abstract and on Page 3429, first column) indicate "a beneficial therapeutic approach toward reducing posttraumatic morbidity." Saatman et al., Page 3433, first column. In a histological study of posttraumatic brain hyperthermia after fluid percussion injury in rats, Dietrich et al. (Abstract only) summed up their findings by stating: "These experimental results indicate that posttraumatic brain hyperthermia might increase morbidity and mortality in patients with head injury by aggregating axonal and microvascular damage." Thus, this sampling of the literature indicates that results from the rat model are generally accepted to correlate with human head injury. This is adequate to satisfy the utility requirements. According to M.P.E.P §2107.03.III:

> If reasonably correlated to the particular therapeutic or pharmacological utility, data generated using in vitro assays, or from testing in an animal model or a combination thereof almost invariably will be sufficient to establish therapeutic or pharmacological utility for a compound, composition or process. A cursory review of cases involving therapeutic inventions where 35 U.S.C. 101 was the dispositive issue illustrates the fact that the Federal courts are not particularly receptive to rejections under 35 U.S.C. 101 based on inoperability. Most striking is the fact that in those cases where an applicant supplied a reasonable evidentiary showing

supporting an asserted therapeutic utility, almost uniformly the 35 U.S.C. 101-based rejection was reversed.

See, also, *In re Brana*, 51 F.3d 1560, 34 USPQ2d 1436 (Fed. Cir. 1995).

Furthermore, biochemical markers for traumatic brain injury are utilized to assess damage after brain injury. See, e.g., Lammie et al. (Abstract only); Fan et al. (Abstract only); Koizumi et al. (Abstract only). Thus, the claimed polypeptides can be used as a marker to measure the extent of brain injury.

It is stated on Page 8 of the Office action that no "actual or specific activity is attributed to" ANIC-BP-1B. This is not the case. The specification provides data establishing the ANIC-BP-1B is a calcium binding protein. On Page 34, experiments are described in which the polypeptide was blotted on to nitrocellulose paper, and then shown to have the ability to bind calcium. Thus, it clearly has the activity desrbied in te specification.

The examiner has the initial burden of setting forth a prima facie case showing that the claimed invention lacks utility. It is not believed that the examiner has satisfied this burden, and even if he had, it is believed that Applicants have provided sufficient information to rebut. Consequently, the rejection should be withdrawn.

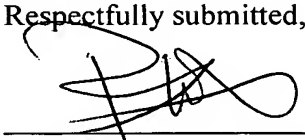
Rejection under §112, second paragraph

Claim 1 has been corrected as suggested.

In view of the above remarks, favorable reconsideration is courteously requested. If there are any remaining issues which could be expedited by a telephone conference, the Examiner is courteously invited to telephone counsel at the number indicated below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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